

WHAT IS CLAIMED IS:

1. Antibodies or active fragments or derivatives thereof, specific for the MORT-1 protein having the amino acid sequence of SEQ ID NO:2.

2. A method for the modulation of the FAS-R ligand effect on cells carrying a FAS-R, comprising:

(a) constructing a recombinant animal virus vector carrying a sequence encoding a viral surface protein (ligand) that is capable of binding to a specific cell surface receptor on the surface of a FAS-R-carrying cell, and a second sequence encoding a MORT-1 polypeptide that is capable of binding to the intracellular domain of the FAS-R and, when expressed in said cells, that is capable of modulating the activity of the FAS-R; and

(b) infecting said cells with said vector of (a), wherein said MORT-1 polypeptide comprises:

(1) the MORT-1 protein having the amino acid sequence of SEQ ID NO:2;

(2) an analog of said MORT-1 protein which differs therefrom by a single amino acid residue and binds with the intracellular domain of the FAS ligand receptor (FAS-IC); or

(3) a fragment of said MORT-1 protein which binds with FAS-IC.

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3. A method for modulating the FAS-R ligand effect on cells carrying a FAS-R, comprising treating said cells with antibodies or active fragments or derivatives thereof, according to claim 1, said treating being by application of a suitable composition containing said antibodies, active fragments or derivatives thereof to said cells, wherein when the MORT-1 protein or portions thereof of said cells are exposed on the extracellular surface, said composition is formulated for extracellular application, and when said MORT-1 proteins are intracellular said composition is formulated for intracellular application.

4. A method for modulating the FAS-R ligand effect on cells carrying a FAS-R, comprising treating said cells with an oligonucleotide sequence encoding an antisense sequence of at least part of a MORT-1 cDNA sequence, said oligonucleotide sequence being capable of blocking the expression of the MORT-1 protein, wherein said MORT-1 cDNA sequence is one which encodes the MORT-1 protein having the amino acid sequence of SEQ ID NO:2 or an analog of said MORT-1 protein which differs therefrom by a single amino acid residue and binds with the intracellular domain of the FAS-R.

5. A method according to claim 4, wherein said treating of said cells is by transfection of said cells with a recombinant animal virus vector by a process comprising:

(a) constructing a recombinant animal virus vector carrying a sequence encoding a viral surface protein (ligand) that is capable of binding to a specific cell surface receptor on the surface of a FAS-R-carrying cell and a second sequence comprising said antisense oligonucleotide sequence; and

(b) infecting said cells with said vector of (a).

6. A method for treating tumor cells or HIV-infected cells or other diseased cells, comprising:

(a) constructing a recombinant animal virus vector carrying a sequence encoding a viral surface protein capable of binding to a specific tumor cell surface receptor or HIV-infected cell surface receptor or receptor carried by other diseased cells and a sequence encoding a MORT-1 polypeptide that when expressed in said tumor, HIV-infected, or other diseased cell is capable of killing said cell; and

(b) infecting said tumor or HIV-infected cells or other diseased cells with said vector of (a),

wherein said MORT-1 polypeptide comprises:

(1) the MORT-1 protein having the amino acid sequence of SEQ ID NO:2;

(2) an analog of said MORT-1 protein which differs therefrom by a single amino acid residue and binds with the intracellular domain of the FAS ligand receptor (FAS-IC); or

(3) a fragment of said MORT-1 protein which binds with FAS-IC.

7. A method for modulating the FAS-R ligand effect on cells comprising applying the ribozyme procedure in which a vector encoding a ribozyme sequence capable of interacting with a cellular mRNA sequence encoding a MORT-1 polypeptide is introduced into said cells in a form that permits expression of said ribozyme sequence in said cells, and wherein when said ribozyme sequence is expressed in said cells it interacts with said cellular mRNA sequence and cleaves said mRNA sequence resulting in the inhibition of expression of said MORT-1 polypeptide in said cells, wherein said MORT-1 polypeptide comprises:

(1) the MORT-1 protein having the amino acid sequence of SEQ ID NO:2;

(2) an analog of said MORT-1 protein which differs therefrom by a single amino acid residue and binds with the intracellular domain of the FAS ligand receptor (FAS-IC); or

(3) a fragment of said MORT-1 protein which binds with FAS-IC.

8. A method for the modulation of the FAS-R ligand effect on cells carrying a FAS-R, comprising treating said cells with a MORT-1 polypeptide capable of binding to the intracellular domain and modulating the activity of said

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FAS-R, wherein said treating of said cells comprises introducing into said cells said MORT-1 polypeptide in a form suitable for intracellular introduction thereof, or introducing into said cells a DNA sequence encoding said MORT-1 polypeptide in the form of a suitable vector carrying said sequence, said vector being capable of effecting the insertion of said sequence into said cells in a way that said sequence is expressed in said cells, wherein said MORT-1 polypeptide comprises at least that part of the MORT-1 protein having the amino acid sequence of SEQ ID NO:2, which part binds specifically to the FAS-IC, or said MORT-1-polypeptide encoding DNA sequence comprises at least that part of the MORT-1 protein-encoding DNA sequence that encodes that part of the MORT-1 protein which binds specifically to the FAS-IC.

9. A method for isolating and identifying proteins, factors or receptors capable of binding to MORT-1 polypeptide, comprising applying the procedure of affinity chromatography in which said MORT-1 polypeptide is attached to the affinity chromatography matrix; said attached protein is brought into contact with a cell extract; and proteins, factors or receptors from the cell extract which bind to said attached protein are then eluted, isolated and analyzed, wherein said MORT-1 polypeptide comprises:

(1) the MORT-1 protein having the amino acid sequence of SEQ ID NO:2;

(2) an analog of said MORT-1 protein which differs therefrom by a single amino acid residue and binds with the intracellular domain of the FAS ligand receptor (FAS-IC); or

(3) a fragment of said MORT-1 protein which binds with FAS-IC.

10. A method for isolating and identifying proteins capable of binding to a MORT-1 polypeptide, comprising applying the yeast two-hybrid procedure in which a sequence encoding said MORT-1 polypeptide is carried by one hybrid vector and sequence from a cDNA or genomic DNA library is carried by the second hybrid vector, the vectors then being used to transform yeast host cells and the positive transformed cells being isolated, followed by extraction of the said second hybrid vector to obtain a sequence encoding a protein which binds to said MORT-1 polypeptide wherein said MORT-1 polypeptide comprises:

(1) the MORT-1 protein having the amino acid sequence of SEQ ID NO:2;

(2) an analog of said MORT-1 protein which differs therefrom by a single amino acid residue and binds with the intracellular domain of the FAS ligand receptor (FAS-IC); or

(3) a fragment of said MORT-1 protein which binds with FAS-IC.

11. A method for isolating and identifying a protein capable of binding to the intracellular domain of FAS-R, comprising applying the procedure of non-stringent Southern hybridization followed by PCR cloning, in which a sequence of a MORT-1 DNA molecule is used as a probe to bind sequences from a cDNA or genomic DNA library, having at least partial homology thereto, said bound sequences then being amplified and cloned by the PCR procedure to yield clones encoding proteins having at least partial homology to said MORT-1 DNA molecule, wherein said MORT-1 DNA molecule comprises:

(1) a DNA sequence which encodes the MORT-1 protein, having the amino acid sequence of SEQ ID NO:2;

(2) a DNA sequence which encodes an analog of said MORT-1 protein which differs therefrom by a single amino acid residue and binds with the intracellular domain of the FAS ligand receptor (FAS-IC); or

(3) a DNA coding sequence consisting of a DNA sequence which encodes a fragment of said MORT-1 protein which binds with FAS-IC.

12. A method for the modulation of the MORT-1-mediated effect on cells, comprising treating said cells with a MORT-1 polypeptide, wherein said treating of said cells

comprises introducing into said cells said MORT-1 polypeptide in a form suitable for intracellular introduction thereof, or introducing into said cells a MORT-1 DNA sequence encoding said MORT-1 polypeptide in the form of a suitable vector carrying said sequence, said vector being capable of effecting the insertion of said sequence into said cells in a way that said sequence is expressed in said cells, said treatment resulting in the enhancement or inhibition of said MORT-1-mediated effect, wherein said MORT-1 polypeptide comprises:

- (1) the MORT-1 protein having the amino acid sequence of SEQ ID NO:2;
- (2) an analog of said MORT-1 protein which differs therefrom by a single amino acid residue and binds with the intracellular domain of the FAS ligand receptor (FAS-IC); or
- (3) a fragment of said MORT-1 protein which binds with FAS-IC.

13. A method according to claim 12, wherein said MORT-1 polypeptide is that part of the MORT-1 protein which is specifically involved in binding to MORT-1 itself, or said MORT-1 DNA sequence encodes that part of the MORT-1 protein which is specifically involved in binding to MORT-1 itself.

14. A method for the modulation of the FAS-R ligand effect on cells carrying a FAS-R, comprising:



(a) constructing a recombinant animal virus vector carrying a sequence encoding a viral surface protein (ligand) that is capable of binding to a specific cell surface receptor on the surface of a FAS-R-carrying cell, and a second sequence encoding a MORT-1 polypeptide that is capable of binding to the intracellular domain of the FAS-R and, when expressed in said cells, that is capable of modulating the activity of the FAS-R; and

(b) infecting said cells with said vector of (a), wherein said MORT-1 polypeptide comprises:

(1) the MORT-1 protein having the amino acid sequence of SEQ ID NO:2;

(2) an analog of said MORT-1 protein which binds with the intracellular domain of the FAS ligand receptor (FAS-IC), which analog is encoded by a DNA sequence which is capable of hybridization to the cDNA encoding SEQ ID NO:2 under moderately stringent conditions; or

(3) a fragment of said MORT-1 protein which binds with FAS-IC.

15. A method for modulating the FAS-R ligand effect on cells carrying a FAS-R, comprising treating said cells with an oligonucleotide sequence encoding an antisense sequence of at least part of a MORT-1 cDNA sequence, said oligonucleotide sequence being capable of blocking the expression of the MORT-

1 protein, wherein said MORT-1 cDNA sequence is one which encodes the MORT-1 protein having the amino acid sequence of SEQ ID NO:2 or a DNA sequence which encodes an analog of said MORT-1 protein which binds with the intracellular domain of the FAS ligand receptor (FAS-IC), which DNA sequence is capable of hybridization to the cDNA encoding SEQ ID NO:2 under moderately stringent conditions.

16. A method according to claim 15, wherein said treating of said cells is by transfection of said cells with a recombinant animal virus vector by a process comprising:

(a) constructing a recombinant animal virus vector carrying a sequence encoding a viral surface protein (ligand) that is capable of binding to a specific cell surface receptor on the surface of a FAS-R-carrying cell and a second sequence comprising said antisense oligonucleotide sequence; and

(b) infecting said cells with said vector of (a).

17. A method for treating tumor cells or HIV-infected cells or other diseased cells, comprising:

(a) constructing a recombinant animal virus vector carrying a sequence encoding a viral surface protein capable of binding to a specific tumor cell surface receptor or HIV-infected cell surface receptor or receptor carried by other diseased cells and a sequence encoding a MORT-1 polypeptide

that when expressed in said tumor, HIV-infected, or other diseased cell is capable of killing said cell; and

(b) infecting said tumor or HIV-infected cells or other diseased cells with said vector of (a),

wherein said MORT-1 polypeptide comprises:

(1) the MORT-1 protein having the amino acid sequence of SEQ ID NO:2;

(2) an analog of said MORT-1 protein which binds with the intracellular domain of the FAS ligand receptor (FAS-IC), which analog is encoded by a DNA sequence which is capable of hybridization to the cDNA encoding SEQ ID NO:2 under moderately stringent conditions; or

(3) a fragment of said MORT-1 protein which binds with FAS-IC.

18. A method for modulating the FAS-R ligand effect on cells comprising applying the ribozyme procedure in which a vector encoding a ribozyme sequence capable of interacting with a cellular mRNA sequence encoding a MORT-1 polypeptide is introduced into said cells in a form that permits expression of said ribozyme sequence in said cells, and wherein when said ribozyme sequence is expressed in said cells it interacts with said cellular mRNA sequence and cleaves said mRNA sequence resulting in the inhibition of expression of said MORT-1

polypeptide in said cells, wherein said MORT-1 polypeptide comprises:

(1) the MORT-1 protein having the amino acid sequence of SEQ ID NO:2;

(2) an analog of said MORT-1 protein which binds with the intracellular domain of the FAS ligand receptor (FAS-IC), which analog is encoded by a DNA sequence which is capable of hybridization to the cDNA encoding SEQ ID NO:2 under moderately stringent conditions; or

(3) a fragment of said MORT-1 protein which binds with FAS-IC.

19. A method for the modulation of the MORT-1-mediated effect on cells, comprising treating said cells with a MORT-1 polypeptide, wherein said treating of said cells comprises introducing into said cells said MORT-1 polypeptide in a form suitable for intracellular introduction thereof, or introducing into said cells a MORT-1 DNA sequence encoding said MORT-1 polypeptide in the form of a suitable vector carrying said sequence, said vector being capable of effecting the insertion of said sequence into said cells in a way that said sequence is expressed in said cells, said treatment resulting in the enhancement or inhibition of said MORT-1-mediated effect, wherein said MORT-1 polypeptide comprises:

(1) the MORT-1 protein having the amino acid sequence of SEQ ID NO:2;

(2) an analog of said MORT-1 protein which binds with the intracellular domain of the FAS ligand receptor (FAS-IC), which analog is encoded by a DNA sequence which is capable of hybridization to the cDNA encoding SEQ ID NO:2 under moderately stringent conditions; or

(3) a fragment of said MORT-1 protein which binds with FAS-IC.